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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/761,008

Applicant(s)

BAKER ET AL.

Examiner

STEVEN LEFF

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 1/25/08
- Paper No(s)/Mail Date _____

DETAILED ACTION

Claim Objections

Claims 1 and 27 are objected to because of the following informalities: The word “pattern” on line 7 is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - The phrase “substantially insoluble” in claim 18 is rejected, as it is a relative term, which renders the claim indefinite. The term “substantially insoluble” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to what is encompassed by the phrase “substantially insoluble”; it is unclear as to what degree of difference is encompassed by this phrase, if “soluble”.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
- Claims 1-8, 10-11, 13, 15-16, and 19-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willcocks et al. (WO 01/94116) in view of Young (6536345).

With regards to claims 1-8, 10-11, 13, 15-16, and 19-40 Willcocks et al. teach a method for printing high-resolution images on an edible substrate. The printing of the image on the edible substrate is accomplished with the use of a drop on demand ink-jet printer that uses food grade ink and is capable of obtaining resolution of greater than 200 dpi. (pg. 6 line 21+) Willcocks et al. further disclose that the edible substrate may be chocolate, or ice cream (pg. 20 lines 9+) and that the image quality and resolution is dependant upon the surface chemistry of the ink and the edible substrate. (pg. 22 line 12+) "Other embodiments according to the invention which can have advantageous effect on image quality include, controlling the surface energy of the chocolate by changing the temperature of the substrate of the ink." (pg. 22 line 12+)

Willcocks et al. further teach that the ink is "water based", (pg. 26 line 10+) or the ink composition may also be substantially "free of water". (pg. 28 line 20+) Willcocks et al. further teach that the compatibility of the ink with the surface of the edible substrate is critical (pg. 21 line 1+) and that "temperature modulation of the ink cartridge can also be used to advantageously modify or control ink rheology to maximize printing performance." (pg. 22 line 29+) An alcohol may be added to the ink composition as part of the carrier so that the image will dry quickly once printed, (pg. 28 line 24+) and additionally dyes may be present. (pg. 31 line 4+) The image is finally treated by "drying or fixing the image after the printing step." (clm. 20)

With regard to the handling of the product once the image has been applied, Willcocks et al. teach using a computer system to manage and coordinate the rapid fulfillment of the customer order. The fulfillment of the orders, or turnaround time, may be on an as-you-wait basis or the customer may return for it at later time (pg. 17 line 13+).

Willcocks et al. however is silent with respect to the media having a viscosity greater than a viscosity of the food product at a temperature of the food product during application of the media.

Young teaches an apparatus and a method of printing on edible substrates. More specifically Young teaches high resolution printing e.g. 360x260 dots per square inch (col. 6 line 1+) on edible substrates of various viscosities, such as, boiled sugar, ice cream and water (col. 6 line 6+).

Therefore with respect to claim 1, although Willcocks et al. does teach the limitation “the media having a viscosity greater than a viscosity of the food product at a temperature of the food product during application of the media” Willcocks et al. do teach applying media to confections where confections are known to one of ordinary skill in the art to include “sweet” foods such as boiled sugar and hot chocolate and thus since Young not only teaches high-resolution printing on edible substrates such as ice cream and confections, as is also taught by Willcocks et al., but Young further teaches printing on water, and boiled sugar specifically and obtaining a high resolution image. Therefore since Young specifically teaches printing on edible substrates, where the viscosity of the edible substrate can range from solid at room temperature or highly viscous, all the way to a minimally viscous substrate such as water, one of ordinary skill in the art at the time of the invention by the applicant would have been motivated to combine the teachings of Willcocks et al. and Young in order to provide decorated edible substrates of different viscosities thus producing an edible substrate which would be more appealing to a larger group of people, in particular children, due to its increased aesthetic appeal. Further, where the specific edible substrate which is to be printed on is merely a consumers choice which is recognized in the art as is taught by Young and evidenced by the fact that Young prints high resolution pictures on such a wide variety of edible substrates with different viscosities and since Willcocks et al specifically teach the desire to provide an ink composition which is compatible with the substrate surface in order to provide a resolute image, one of ordinary skill would have further been motivated to adjust the specific working parameters such that the media has a viscosity greater than a viscosity of the food product at a temperature of the food product during application of the media, as addressed above, for the purpose of producing a high resolution image on an edible substrate of the consumer's choice where the viscosity of the media is determined by the edible substrate itself since a minimally viscous fluid such as water would require a more viscous media to be applied in order to achieve the desired resolution on the surface due to the fact that if the media is not more viscous than the water then the image will bleed or diffuse into the substrate since the substrate does not have a stable surface layer, where the more viscous media is less flowable and

thus able to maintain the desired image in the desired substrate since the media is less prone to "run" since the media may be "free of water" as is taught by Willcocks et al. (pg. 28 line 20+).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Willcocks et al. and Young and adjust the specific working parameters, and specifically that the media has a viscosity greater than a viscosity of the food product at a temperature of the food product during application of the media, for the purpose of producing a high resolution image on an edible substrate of the consumer's choice, and to further teach a method of printing which is capable of not only printing on viscous substrates but further on minimally viscous substrates due to the fact that the provision of providing an image on an edible substrate is a desirable feature, which would further enhance the substrate's overall appearance thereby further increasing sales.

With respect to claims 7, 38, and 40 although Willcocks et al do not teach a specific drop volume, Willcocks et al. does teach the use of a drop on demand ink jet printer for producing images on edible substrates where the resolution of the image should be greater than 200 dpi, where Willcocks et al. specifically teach a resolution of up to 1200 dpi. Therefore, since the referenced printing means and resolution meet those of the instant claims, and due to the fact that resolution is a direct result of drop size, it would be expected that the drop volume would meet the limitations of the instant claims, absent any clear and convincing evidence and/or arguments to the contrary. Further the patent office does not possess the facilities to test the claimed invention and those of the reference. The Office action has set forth a prima facie case of obviousness, and thus the burden shifts to applicant to demonstrate otherwise. Thus the claimed invention is obvious over the reference and therefore it would be expected that the drop volume of the edible media would meet the limitations of the claims, absent any clear and convincing evidence or arguments to the contrary.

With regard to claims 2-4 and 29-30 although Willcocks et al. do not disclose specifically treating the ice cream by cooling and/or freezing to a specific temperature, Willcocks et al. do teach that the image is treated by "drying or fixing the image after the printing step", (clm. 20) and further disclose the use of ice cream as the edible substrate (pg. 20 lines 9+). Since the reference states that the edible substrate is ice cream and that the edible substrate is treated by "fixing the image after the printing step", it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." (see MPEP 2144.01) In the instant case, one of ordinary skill in the

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art would view that the “fixing step” could be meant to represent cooling or freezing to a specific temperature in order to keep the ice cream from melting.

With respect to claims 5, 28, and 29 although Willcocks et al. do not specifically state how or when the edible substrate is packaged, Willcocks et al. does teach using a computer system to manage and coordinate the rapid fulfillment of the customer order. The fulfillment of the orders, or turnaround time, may be on an as-you-wait basis or the customer may return for it at later time. (pg. 17 line 13+) One of ordinary skill in the art would have been motivated to contain the edible substrate in a container after the application of the image for shipping and/or transporting purposes in order to protect the edible substrate from the environment. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to have provided a container prior to or after printing for protecting the edible substrate after the image has been applied for packaging purposes.

With regard to claims 26, 31, 33, and 34 Willcocks et al. do not teach a value in terms of the amount of image bleed, which directly affects the resolution of the image. The degree that an image bleeds is dependant upon different factors, such as the surface characteristics of the substrate and the media used, as well as the amount of time it takes the image to dry after being applied. In addition, Willcocks et al. teach an ink composition, which includes alcohol for its art recognized and applicant’s intended function of reducing the bleed of the ink once applied to the substrate. One of ordinary skill in the art would have been motivated to combine the teaching of Willcocks et al. and Young and recite an image bleed value in order to ensure that the desired image resolution is achieved as is desired by both Willcocks et al. and Young. Therefore since Willcocks et al. teach that alcohol may be included in the media for its art recognized and applicant’s intended function of achieving a desired resolution, and since the referenced method and materials meet those of the instant claims, it would be expected that the resulting product, an edible substrate with an image applied, would thus meet the limitations of the claims, as it would not have involved an inventive step for one of ordinary skill in the art to have selected a specific “image bleed” value for use in the invention as disclosed since both Willcocks and Young teach high resolution images where the image bleed value directly affects the overall resolution of the image as a function of the different factors described above.

- Claims 9, 13, 14, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willcocks et al. (WO 01/94116) in view of Young (6536345) and further in view of Baker et al. (5938826).

Willcocks et al. are taken as above.

Young et al. is taken as above.

Baker et al. teaches applying marks to "food products" (col. 5 line 22) using "hot melt inks which are solid at room temperature and liquid at temperatures above room temperature. Hot melt inks can be used, for example, in ink jet printing. During ink jet printing, the ink is heated so that it becomes liquid, and then is ejected through a print head onto a substrate. The ink then solidifies on the substrate." (col. 1 lines 5+) The ink has a targeted melt viscosity of about 5 to 100 centipoise, (col. 3 line 10+) an auto-dispersing or a non-dispersible wax (clms. 1 and 10) and is ejected by activation of the PZT (piezoelectric transducer). (col. 5 line 9+)

With respect to claims 9, 13, 14, and 17-18, Willcocks et al do not teach the use of a piezoelectric ink jet printer, and further does not teach the use of an ejection media which has a viscosity of about 70-100 cps. at room temperature, or 8-20 cps. under ejection conditions. However, since the provision of providing an image on an edible substrate is a desirable feature, which would further enhance the substrate's overall appearance, one of ordinary skill in the art would have been motivated to combine the teaching of Willcocks et al., Young, and Baker et al. in order to produce an edible substrate with an image using a piezoelectric ink jet printer, thus further automating the method and producing a more resolute image. The selection and use of a particular printer known in the art would not have involved an inventive step and therefore would have been obvious to one of ordinary skill in the art to utilize, based upon the ink composition, the desired image and substrate utilized. Further, it would have been obvious to one of ordinary skill in the art to use a wax in the composition of the media as is specifically taught by Baker, in order to increase the viscosity of the media to it's operational range and thus subsequently increase the number of edible substrates that the image can be applied to.

Therefore with respect to claims 9, 13, 14, and 17-18, it would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to have produced a substrate with an image that was applied through the use of a piezoelectric ink jet printing in order to provide a more resolute image with respect to the substrate and other parameters.

Response to Arguments

Applicant's arguments filed 1/25/08 have been fully considered but they are not persuasive. With respect to the 112 2nd rejection regarding the phrase "substantially insoluble" it is noted that applicant urges that page 8 lines 4-5 teaches a definition for this phrase however it is pointed out that line 5 teaches

the media can include a carrier that has a “low water solubility” and thus the term “substantially insoluble” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to what is encompassed by the phrase “substantially insoluble”; it is unclear as to what degree of difference is encompassed by this phrase, if “soluble” since the example given on line 5 of page 8 does not give a specific example but merely one possibility since it states “such as animal fat” where line 6 further teaches possible additives however they are not with respect to the phrase “substantially insoluble”.

Regarding applicant’s argument that Willcocks et al. fail to teach that the surfactant or dispersants increases or decreases the viscosity or density of the media it is noted page 28 line 3 specifically teaches an amount from 1 percent to 48 percent where the difference in percentages and the specific dispersant and/or surfactant would positively alter the viscosity of the ink thereof in addition to teaching that the ink is “water based” (pg. 26 line 10+), or that the ink composition may also be substantially “free of water” (pg. 28 line 20+) other factors which affect viscosity.

Regarding applicant’s argument that the Examiner cites Willcocks et al. as teaching “the media having a viscosity greater than a viscosity of the food product”, it is initially noted that Willcocks et al. teach the image quality and resolution is dependant upon the surface chemistry of the ink and the edible substrate (pg. 22 line 12+) where Young is relied upon to teach printing high resolution pictures on a wide variety of edible substrates with different viscosities where the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Willcocks et al. clearly teaches the desire to print on different substrates since Willcocks et al. teach printing with respect to solid candy, confections and ice cream which may be flow able while Young does not disclose all the features of the present claimed invention, Young is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, specifically to teach providing decorated edible substrates of different viscosities thus producing an edible substrate which would be more appealing to a larger group of people, in particular children, due to its increased aesthetic appeal, and further to teach that the inventive aspect of the applicants invention, high

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resolution printing on edible substrates as is taught by Willcocks et al., where the specific edible substrate which is to be printed on is merely a consumers choice which is recognized in the art as is taught by Young and evidenced by the fact that Young prints high resolution pictures on such a wide variety of edible substrates with different viscosities.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Willcocks et al. and Young and adjust the specific working parameters, as addressed above, for the purpose of producing a high resolution image on an edible substrate of the consumer's choice, and to further teach a method of printing which is capable of not only printing on viscous substrates but further on minimally viscous substrates due to the fact that the provision of providing an image on an edible substrate is a desirable feature, which would further enhance the substrate's overall appearance thereby further increasing sales and in combination with the primary reference, discloses the presently claimed invention since Willcocks et al. teach the image quality and resolution is dependant upon the surface chemistry of the ink and the edible substrate (pg. 22 line 12+) and Young teaches printing on very minimally viscous substrates. It is further noted that MPEP 2144.01 states that "in considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom," where in the instant case a minimally viscous fluid such as water would require a more viscous media to be applied in order to achieve the desired resolution on the surface due to the fact that if the media is not more viscous than the water then the image will bleed or diffuse into the substrate since the substrate does not have a stable surface layer, where the more viscous media is less flowable and thus able to maintain the desired image in the desired substrate since the media is less prone to "run" since the media may be "free of water" as is taught by Willcocks et al. and include other components (pg. 28 line 20+).

In response to applicant's argument neither Willcocks nor Young teach the desired image bleed it is noted that applicant has not provided evidence or convincing arguments to support their position, other than to simply disagree with the position of the Office where one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). However as was clearly set forth in the previous Office action the degree that an image bleeds is dependant upon different factors, such as the surface characteristics of the substrate and the media used, as well as the amount of time it takes the image to dry after being applied. In addition, Willcocks et al. teach an ink composition, which includes alcohol for its art recognized and applicant's

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intended function of reducing the bleed of the ink once applied to the substrate, where Willcocks et al. further teach the addition of alcohol to the media composition as part of the carrier so that the image will dry quickly once printed, (pg. 28 line 24+) and an image resolution of 200 dpi after the image has been applied to the edible substrate using an ink jet printer. Therefore since Willcocks et al. teach that alcohol may be included in the media for its art recognized and applicant's intended function of achieving a desired resolution, and since the referenced method and materials meet those of the instant claims, it would be expected that the resulting product, an edible substrate with an image applied, would thus meet the limitations of the claims, as it would not have involved an inventive step for one of ordinary skill in the art to have selected a specific "image bleed" value for use in the invention as disclosed since both Willcocks and Young teach high resolution images where the image bleed value directly affects the overall resolution of the image as a function of the different factors described above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVEN LEFF whose telephone number is (571)272-6527. The examiner can normally be reached on Mon-Fri 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Drew E Becker/

Primary Examiner, Art Unit 1794

/Steven Leff/

Examiner, Art Unit 1794